Chapter 12
Construction & Demolition Wastes

This chapter describes the management and disposal systems for construction and demolition (C&D) wastes in Clark County. C&D wastes are solid wastes that require special handling and are collected, processed, recycled and/or disposed of. C&D includes materials regulated as MSW, as well as other wastes regulated in other ways. Some C & D materials are considered special wastes; see Chapter 14 *Special Wastes* for greater details.

Definitions of Construction & Demolition Wastes

Construction and Demolition wastes are generated primarily during residential and non-residential development. The construction and demolition waste substream is made up of similar materials that come from two distinct but related activities. Remodeling and repair work generate both types of wastes, often mixed together.

Construction Waste

Construction waste is not defined in WAC 173-304. "Construction and demolition waste" is defined in the Clark County Code (CCC) Chapter 24.12 as "waste building materials and rubble, resulting from construction, remodeling, repair and demolition operations on houses, commercial buildings, pavements and other structures." For the purposes of this Plan, construction waste is defined as: Material that is generated as a direct result of building construction activity; such waste includes, but is not limited to, concrete, rubble, fiberglass, asphalt, bricks, plaster, wood, metal, caulking, paper and cardboard, roofing wastes, tar paper, plastic, plaster and wallboard and other similar materials.

Construction job-site waste often includes components that make the combined mixed wastes equivalent to MSW. Paint cans, food packaging, floor sweepings, polystyrene foam and other MSW components are often put in construction site waste containers. The combined waste stream can require disposal of the load as MSW.

Demolition Waste

"Demolition waste" is defined in WAC 173-304 as "solid waste, largely inert waste, resulting from the demolition or razing of buildings, roads and other man-made structures. Demolition waste consists of, but is not limited to, concrete, brick, bituminous concrete, wood and masonry, composition roofing and roofing paper, steel, and minor amounts of other metals, such as copper. Plaster (i.e., drywall or plasterboard) or any other material, other than wood, that is likely to produce gases or

a leachate during the decomposition process and asbestos wastes are not considered to be demolition waste for the purposes of this regulation."

For the purposes of this Plan, demolition waste is defined as: Material that is generated as a direct result of demolition activity. Such wastes include, but are not limited to, concrete, rubble, asphalt, brick, wood, roofing shingles, paper and cardboard, tar paper, pipe, plastic, steel, incidental amounts of plasterboard and similar materials.

Inert Waste

"Inert waste" is defined in WAC 173-304 as "non-combustible, non-dangerous solid wastes that are likely to retain their physical and chemical structure under expected conditions of disposal, including resistance to biological attack and chemical attack from acidic rainwater." According to the definition of inert wastes in Ecology's draft Technical Information Memorandum 90-2, Ecology intended to include concrete, glass, pottery, ceramics and other waste materials that would retain their chemical and physical structures over a long time. In accordance with the WAC 173-304 regulations update, Ecology has indicated that it may develop a list of acceptable materials that would be considered inert wastes.

Inert wastes do not include contaminated soils removed from cleanup sites (see Chapter 14 *Special Wastes*) or asphalt. Non-hazardous dusts, ashes and other residues produced by incinerators, industrial processes and air pollution control equipment may or may not be classified as inert wastes, depending on their specific characteristics. For the purposes of this Plan, these materials are not considered inert wastes, unless specifically designated by the Southwest Washington Health District (SWWHD) with agreement from Ecology. For the purposes of this Plan, inert wastes are defined as: concrete; rubble; brick; soil; glass; tile; similar material.

Relationships between C&D Wastes

Although construction wastes are similar to demolition wastes, they are often cleaner, because the waste materials usually have not been painted or mixed with other materials. Construction wastes are also generated in distinct stages as construction progresses. For example, framing and sheathing produces large quantities of wood waste; drywalling produces waste sheet rock; and plumbing and mechanical installations generate pallets, metal, plastics and cardboard. The sequential nature of construction allows targeted recovery of specific recyclable materials as a construction project proceeds. In remodeling projects, manual demolition provides the potential for a high degree of source separation, similar to that of construction.

Demolition waste is more difficult to source-separate than construction waste. Reusable items and certain recyclables are sometimes recovered before mechanical demolition begins. Manual demolition, also known as "deconstruction," can maximize the separation and recovery of recyclable materials, but is not always feasible. Mechanical demolition, done by bulldozer or excavator, tends to crush and combine materials, limiting source-separation, unless recovery facilities that sort mixed materials are available. Mechanically crushed materials are commonly landfilled, with limited attempts at recovery.

The construction and demolition waste substream can also include materials that are contaminated with asbestos, lead from paint or solder, mercury from fluorescent light bulbs, preservatives, such as pentachlorophenol and creosote, PCBs from light fixtures and other electrical equipment, and other organic and inorganic contaminants. These materials are more common in demolition waste, because current regulations restrict many of them from new construction.

Land Disposal Categories

C&D wastes in the State of Washington are regulated primarily under WAC 173-304 and in Clark County under County Code Chapter 24.12. In addition, Ecology has issued draft Technical Information Memorandum 90-2, which clarifies the rules for inert and demolition wastes. Revisions to the WAC 173-304 regulations, including revised special waste definitions, are under consideration. In Oregon, C&D wastes are regulated by the Oregon DEQ under OAR 340-93-190.

WAC 173-304 establishes four general categories of land disposal opportunities besides full MSW landfills for all or limited components of C&D wastes. These categories are:

Use of Inert Waste and Demolition Waste as Fill Material.

WAC 173-304-461 provides for the use of limited amounts (less than 2,000 cubic yards of the total job) of inert waste and demolition waste as general unregulated fill material, as in road building. Any fill activity greater than 50 cubic yards requires a grading permit.

Inert Waste and Demolition Waste Landfills.

Inert and demolition waste landfill requirements are defined in WAC 173-304-461. These landfills are currently subject to minimal location, design and performance standards. Owners and operators of inert and demolition waste landfills are not permitted to accept any other types of waste.

Wood Waste Landfills.

Wood waste landfill requirements are defined in WAC 173-304-462. These landfills are subject to more restrictive siting and operating standards than inert and demolition waste landfills but fewer than limited-purpose landfills. Owners and operators of wood waste landfills are not permitted to accept any other type of waste.

Limited-Purpose Landfills.

A limited-purpose landfill is defined in WAC 173-304-100 as a facility "that receives solid waste of limited types, known and consistent composition, other than wood wastes, garbage, inert waste and demolition waste." Limited-purpose landfills are a subcategory of MSW landfills, which are defined in WAC 173-304-460. Limited-purpose landfill standards are described in WAC 173-304-460(5) and are basically identical to the design and performance standards for MSW landfills. These standards can be waived if it can be proved that a facility adequately protects the environment and public health and safety.

A landfill sited and operated to wood waste standards could also accept inert and demolition wastes, as long as the more restrictive standard of the two facility types was met, and the facility is permitted as a combination "wood waste and inert/demolition waste landfill."

Under a strict interpretation of the WAC 173-304 definition of "demolition waste," a "demolition waste landfill," sited under the demolition waste standards, would be unable to accept construction wastes or the wood and vegetative components of land clearing wastes. In addition, a landfill sited and operated to the demolition waste standards is not allowed to accept drywall, plaster, gypsum wallboard or similar materials, other than wood, capable of producing a gas or leachate. To meet the current WAC 173-304 standards, these materials would have to be disposed of in a landfill that is sited and operated under the more stringent WAC 173-304-460 MSW landfill or limited-purpose landfill criteria.

For the purposes of this Plan, facilities capable of accepting the entire C&D waste stream are classified as "special-purpose landfills" and sited under the limited-purpose landfill standards. Facilities that accept specific waste stream components, such as wood waste, are also classified as "special-purpose landfills" and will be sited under the limited-purpose landfill standards.

Because the overall historical demolition and construction waste stream component contains significant amounts of plaster, drywall and other materials capable of producing gas and/or leachate, it is not recommended that facilities that accept these materials be sited and permitted under the inert and demolition waste landfill standards. Facilities, which accept only inert wastes, could be permitted as inert-waste-only landfills.

Ecology is currently undergoing a substantial review of the state's solid waste facility permitting system, as directed by the Washington State Legislature. This review is an attempt to address various permitting discrepancies in existing statutes and rules. For example, recyclers' wood waste piles are much more heavily regulated (as solid waste facilities), than wood waste piles with similar characteristics at sawmills. The permitting review addresses various permitting approaches for solid waste streams, including permit by rule, general permits or model permits. The review also addresses the potential of moving toward a more risk-based approach to regulating various solid waste streams. This approach may remove impediments to the legitimate recycling of some of the special wastes discussed in this chapter.

Table 12.1 Permitted disposal options for materials.

Clean Fill[1]	Inert Waste Landfill	Limited Special Purpose C & D Landfill
Soil	Concrete only	Asphalt
Mud	Rubble only	Wood
Sod	Brick only	Roofing shingles
Rocks	Tile only	Plaster and wallboard
	Glass only	Steel and metal
		Pipe
		Plastic
		Tar paper
		Paper and cardboard
		Stumps
		Brush and vines
		Tree branches
		Mixed construction waste
		Mixed demolition waste

[1]Clean fill is regulated through a grading permit.

Existing Conditions

Construction Waste

Most construction waste in Clark County is delivered to the CRC transfer stations in Clark County, exported out of the county to out-of-county C&D landfills or is recycled, reused or burned for energy recovery. Some wastes are illegally dumped and burned on-site or at other un-permitted locations within the county. Clean wood waste and gypsum delivered to CRC are accepted for recycling at a reduced tipping fee. Clean wood waste is accepted at H & H at a fee—it is used for hogfuel. Combined construction site waste – all of a site's waste, combined in one drop-box and hauled by certificated or contracted garbage haulers – is accepted at CRC as MSW. CRC then sorts the drop-box contents to recover wood, metal and other recyclable materials. The MSW wastestream includes an unknown percentage of wastes originating from construction sites. Construction materials recovered from tipping floors represent a significant percentage of CRC's 10% required recovery tonnage.

Demolition and Inert Waste

Demolition and inert wastes are currently delivered to the CRC transfer stations, exported to out-of-county disposal locations, dumped or burned illegally or recycled. Some inert and demolition wastes, such as concrete, rubble and asphalt, are currently being recycled into reusable base rock, asphalt feedstock, rip-rap and other building

materials. In addition, some wood demolition wastes are being chipped into chipboard feedstock, hog fuel, bark dust and compost products. In some cases, demolished buildings are chipped and the screened wood materials and fines are spread on-site. Yet, some demolition waste must be handled as MSW. The final demolition of structures that have been damaged by fire results in a mix of damaged household goods, clothes, food and charred wood and ash. Unless separated, this mix is considered MSW for regulatory purposes.

Construction and Demolition Recycling

Currently, no specialized recycling facilities in the County are designed to process mixed loads of construction and demolition wastes. CRC uses manual tipping floor methods to recover some non-source-separated materials, as well as accepting source-separated materials for a reduced tipping fee. Several existing recyclers/reusers accept presorted loads of materials for a fee. These are primarily metal recyclers and scrap dealers, and paper and cardboard recyclers. Some small-scale salvage and restoration operators focus primarily on recovering reusable goods, building materials and fixtures. The Gilbert Western Corporation's Fisher Rock Quarry, located west of Camas, is the only active permitted facility for recovering and recycling old asphalt, concrete, bricks, masonry, and rocks into reusable building materials. At some construction and demolition sites, "free wood" and other material bins have been placed out for salvage by the public. In addition, inert materials such as clean soils, rock and crushed concrete and bricks may be used as general grading fill material.

Education and Recognition Programs

In 1998, Clark County (in partnership with the Clark County Homebuilders Association) developed a program called "Build A Better Clark". The program provides builders with the opportunity to incorporate environmentally friendly practices into the construction of a home and then market that home through the recognition program. A job-site recycling plan is at the core of every "Build A Better Clark" project and encourages waste reduction and recycling.

Closed Disposal Facilities

Between 1990 and 1992, all three private Clark County landfills, which used to accept C&D wastes, closed. These facilities were the Circle "C" Landfill (closed October 1990); the Leichner Landfill (closed December 1991); and the Dietrich Demolition Pit (closed March 1992).

Proposed Disposal Facilities

New or expanded private disposal facilities have been proposed in Clark County since before the closure of the three in-county landfills in the early 1990's. As of early 1998, one proposal from East County Reclamation and Recycling is still active and in the permitting process. (Note: at the time of writing this update, the application was still in process.) The following profile is provided for information only and is not intended to confer any particular planning or operational status for the proposed facility: The East

County Reclamation and Recycling project, as originally proposed in early 1989, consisted of reclaiming an approximately 38-acre mined-out gravel pit in east Clark County by landfilling with demolition waste. The location of the proposed project is north of SE First Street; west of 192nd Avenue; and south of Clark County's closed English Pit Landfill. The landfill, as originally proposed, would have an in-place capacity of approximately 1.5 million cubic yards. The original landfill proposal has evolved into a limited-purpose landfill combined with a significant recycling program for all types of C&D wastes. This shift was due mainly to Washington State's more restrictive interpretation of the definition of demolition waste and the need for proper management of other wood waste components of the C&D waste stream. As of early 1999, the proposed project consisted of the development of a larger facility, including property from an adjoining parcel of 68 acres. The adjoining parcel, which is west of the original proposed site, is owned by the Peter Kiewit Company. The project's proponents have also proposed processing and recovery of recyclable materials as an integral and substantial part of the overall project. The additional 68 acres adds approximately 2.8 million cubic yards to in-place capacity, bringing the total site in-place disposal capacity to approximately 4.3 million cubic yards.

Quantities

Historical Information

There are limited historical data on the quantities of C&D waste generated and/or disposed of in Clark County. In 1989 and 1990, the Circle "C" Landfill reported the disposal quantities of C&D wastes shown in Table 12-2.

Table 12-2
Historical Circle "C" Landfill Waste Quantities
(loose cubic yards)

Waste Type	1989	1990 (partial year)
Construction and demolition	68,000	42,000
Stumps and brush	61,000	38,000
Total	129,000	80,000

These quantities could be inaccurate for several reasons. Some of these reported wastes were imported from jurisdictions outside of the County. No separate C&D waste quantity data were reported for the Leichner Landfill. Records of waste volumes disposed at the Dietrich Demolition Pit in 1990 were not available for review, but the operator did report receiving 32,000 cubic yards of waste. Due to the distributed nature of C&D management, no current tonnage information is available. C&D recycling and disposal has been done both in-county and out-of-county, making tracking difficult.

Projected C&D Waste Generation

In March 1991, Clark County prepared an analysis and estimate of future C&D waste generation. This analysis included a review of existing C&D waste generation studies for Snohomish County, Washington; King County, Washington; and Portland, Oregon (Metro). From study data, it was calculated that C&D waste generation in Clark County averages between 0.5 to 1.0 loose cubic yards per person per year.

Based on a constant per person generation of 0.7 loose cubic yards per year, a Clark County population forecast of 316,800 for 1997 and a density of 750 pounds per loose cubic yard, the estimated amount of C&D waste generated in 1997 is 222,000 cubic yards, or 83,250 tons.

To forecast the amount of C&D waste generated over the planning period of 1998 to 2011, the following assumptions were used:

- A constant per capita generation rate of 0.70 loose cubic yards;
- The population estimates in Chapter 2, Table 2-3;
- The average density of the C&D waste stream of 750 lbs. Per cubic yard;
- C&D recycling programs divert 25% to 50% from disposal.

Using these assumptions, the projected amount of C&D waste generated during the planning period will total 4.3 million cubic yards, or 1.6 million tons. Of this amount, 2.15 to 3.23 million cubic yards (0.80 to 1.21 million tons) will require disposal.

Needs and Opportunities

Technologies for recycling and reuse of various materials within the C&D waste stream are currently or potentially available. Because waste reduction and recycling is a higher priority than incineration and landfilling, the County and cities should aggressively pursue and encourage methods in the public and private sectors that would increase recycling and reuse.

The County and cities need to support and facilitate the development of waste reduction and recycling programs and opportunities for private sector handlers of C&D waste. A significant amount of C&D waste that could be recycled is believed to be exported outside the County to landfills in Southwest Washington and Northern Oregon. Additionally, onsite disposal of wastes through burial or burning often occurs.

If convenient and economical recycling and disposal opportunities are not available, illegal dumping, onsite disposal (burial of wastes on the site from which they were generated) and burning of these materials may increase. Ultimately, this could result in increased costs to the public and private sectors for cleanup and may also result in potential short- and long-term threats to the environment.

Reduction/ Reuse/ Recycling

Waste reduction, reuse and recycling are higher priorities than energy recovery or landfilling. Backing up the waste hierarchy could be enhanced by a variety of strategies, including developing:

- Economic incentives that would provide lower disposal fees for recyclable, source-separated C&D materials;
- A regulatory structure that encourages and requires proper management of C&D waste;
- Special programs that could include joint public/private educational efforts, focusing on C&D waste reduction opportunities and building permit requirements that promote proper management of these wastes. The programs could encourage and foster the source separation of C&D wastes and would significantly reduce the amount of C&D wastes being landfilled.
- Guidelines and information for demolition and construction contractors and "do-it-yourself" home owners on methods and opportunities for source separating, reusing and reducing C&D wastes.
- "De-construction" methods to increase the recovery of reusable materials before mechanical demolition begins.
- The use of certain source-separated C&D wastes, such as wood and aggregates, for on-site erosion control and reuse.

Recycling/reuse could be facilitated by encouraging:

- The use of strictly inert wastes as general subgrade fill, in roadway construction or in similar applications. These uses should be encouraged, with careful oversight by the Health District
- Direct separation and reuse of construction and demolition waste materials, such as wood, pipe, steel and metal.
- Separation and recycling of drywall and plasterboard, scrap lumber, metals and other recyclable C&D materials.

Specific actions that could be taken include:

- Expanding publicity, through brochures and other media, about the existing private sector recycling companies, including the Re-Building Center, Northwest Salvage, CRC, and H & H Wood Recyclers, who are capable of converting certain C&D wastes into reusable building materials, landscaping products and hog fuel.
- Working with public and private sector C&D waste generators to identify potential reduction and recycling opportunities for the C&D waste stream.
- Investigating potential recycling markets for C&D wastes, including regional industrial waste exchanges, such as Pacific Materials Exchange, Spokane, Washington; Industrial Material Exchange, Seattle, Washington; and the Reusable

Building Materials Exchange (RBME) Seattle Washington, as described in the chapter on Waste Reduction.

Recoverable Construction and Demolition Waste

The list of potentially recoverable materials within the construction and demolition waste stream includes paper, plastic, lumber, textiles, glass, metals, concrete, asphalt, bricks, drywall, roofing materials, reusable fixtures, such as sinks, toilets, bathtubs, etc. and inert fill material, such as rocks, soil, concrete and brick. Of these, metals, wood, cardboard, inert materials, asphalt, drywall and reusable fixtures currently have the best potential for recovery. Used asphalt roofing shingles, currently being used in small amounts for energy recovery, may have recycling potential in the future. Other materials, such as glass and plastics, are not usually recoverable, because quantities are too small, and they are usually contaminated with other wastes.

Construction and demolition wastes may be made up of similar materials, making it necessary to separate. Separation will often be specific to a particular job, but construction projects frequently lend themselves to more convenient source separation as wastes are generated. In addition, construction wastes are often cleaner than demolition wastes, because waste materials usually have not been painted or combined with other materials.

Wood can be recovered for reuse, composted or shredded for hog fuel and wood pellets. Wooden pallets and other clean lumber can also go to reuse or be chipped for hog fuel markets or chipboard manufacturing. Concrete, bricks and rubble can be recovered and crushed for aggregate. Bricks can also be reused. Metals, paper, cardboard and some plastics can be recycled. Technology is available for the processing and recycling of plasterboard, drywall and roofing. Materials such as windows, wood trim, flooring and doors can also be reused, if not damaged during demolition activities, to further reduce disposal.

Private construction and demolition contractors should be encouraged to more effectively separate waste materials onsite and to directly recover materials that are easily reused. Current construction and demolition practices often promote excessive waste generation and limited recycling opportunities, because work schedules create limitations, materials may not be of high enough quality for reuse and disposal may be more economical than labor costs.

Inert wastes such as rocks, boulders, clean soils, concrete and bricks can be removed from the waste stream and processed into gravel and rock products or used for general fill and grading. With the exception of soils, these materials must be processed, using rock crushing and screening equipment. Large chunks of concrete can also be used for rip-rap. Clean soils, crushed concrete, and other inert waste materials can be used for road fill, quarry reclamation and general fill. Keeping these materials segregated from other materials is necessary to increase the amounts that can be successfully recovered. On most large jobs, separation is already being done. Establishing a clearinghouse or broker system for "fill wanted and available" situations could make it easier for small waste generators to avoid illegal dumping and dispose or recycle these wastes responsibly.

Disposal Options

Because some of the individual components of the C&D waste stream are not reusable or recyclable or the existing technology and markets do not allow them to be reused or recycled, there is a need for the economic and convenient disposal of these wastes in landfills. With the closures of the Leichner Landfill, the Dietrich Demolition Pit and the Circle "C" Landfill, the only current in-county disposal option is delivery to the CRC transfer stations. In-county disposal capacity might be preferred over direct waste export, if the tradeoffs between economic, transportation and environmental impacts favor local landfilling. Or the resources spent on developing local landfill capacity may be better directed toward C&D material recovery efforts, with only the residuals being exported to out-of-county landfills.

If in-county disposal facilities are desired, two types of landfills could be considered for development: a special-purpose landfill, or landfills, for all C&D wastes; and an inert-waste-only landfill, or landfills. Special-purpose landfills for C&D wastes would need to be developed with adequate design and operational safeguards to properly protect public health and safety and the environment. These safeguards would be required to alleviate concerns about the leaching of contaminants and the generation of landfill gas from wastes. Inert waste landfills could be sited, constructed and operated under less stringent standards than C&D facilities, because the inert waste stream carries a lower risk.

Generator Education

The construction contractors and subcontractors, as well as demolition companies that operate within Clark County and the cities also work in other cities and counties throughout the greater Vancouver/Portland area and Northwest. Regulations about hauling and disposal vary from jurisdiction to jurisdiction. Recycling and reuse opportunities also vary from area to area. Build a Better Clark program has seen some success in reaching area homebuilders. Wide distribution of information about waste prevention practices, recycling and reuse options, and County hauling and disposal regulations may see similar successes.

Additional Data Requirements

Clark County and the cities have limited data on the quantities of C&D wastes generated, disposed and recycled in the county. This makes it difficult to fully plan for future disposal needs and supporting enhanced private sector waste reduction and recycling efforts. There does not appear to be any direct way to measure the quantities of C&D wastes in Clark County, except for those received at the CRC transfer stations. In addition, there is no method for measuring the extent to which C&D wastes are imported into or are being exported out of Clark County. If new in-county facilities are developed, routine reporting of quantities of materials received, recycled and disposed would be a requirement of the facility's permit to assist in obtaining this information.

Alternatives

1. *Sponsor public and private sector education program designed to encourage C&D waste reduction and recycling.*

The construction contractors and subcontractors, as well as demolition companies that operate within Clark County and the cities also work in other cities and counties throughout the greater Vancouver/Portland area and Northwest. Regulations about hauling and disposal vary from jurisdiction to jurisdiction. Recycling and reuse opportunities also vary from area to area. Build a Better Clark program has seen some success in reaching area homebuilders. Wide distribution of information about waste prevention practices, recycling and reuse options, and County hauling and disposal regulations may see similar successes. Targeted technical and educational efforts about regulations and opportunities, as well as waste prevention practices should have wide distribution to the construction industry. While the Build a Better Clark program has reached many homebuilders, education may still need to reach a broader audience of remodelers, homebuilders that do not belong to the homebuilders association, commercial contractors and demolition companies. Education about how to do jobsite recycling, as well as information about licensed or authorized haulers would help to ensure that generators who want to recycle would have fewer barriers.

2. *Actively encourage and support the private sector in enhancing and expanding C&D waste recycling and reuse opportunities.*

Support salvage practices and markets for reused building materials; support development of industries using recycled construction and demolition materials by enhancing incentives to recycle materials instead of diverting materials to recovery. As part of the its waste characterization study, the County can estimate the quantity and grades of salvageable wood and other materials available within the County. This information can be provided to the private sector to stimulate new industry and potential product development.

3. *Use the (building and demolition) permitting process to educate applicants about available recycling opportunities and proper disposal options.*

Education pieces about waste prevention practices, recycling and reuse options, and County hauling and disposal regulations is a strategy discussed in alternative A. The permitting process is one avenue that can be used to distribute the information to the targeted audience.

4--8. Disposal Alternatives:

All facilities for general C&D materials should be required to accept C&D waste generated in the County. Although certain materials composing the C&D waste stream are inert, other portions will decompose over time and have the potential to produce leachate and gas. Therefore, any facility proposing to accept all components of the C&D

waste stream for disposal will be required to site, develop and operate the facility as a special-purpose landfill under the standards presented in Appendix B.

A full-service C&D facility will essentially be designed, constructed and operated to meet nearly all of the requirements for a full sanitary landfill. Though it meets full sanitary landfill standards, it will not be permitted as a full sanitary landfill. Permitting of facilities, under the classification of a wood waste landfill or a combined demolition and inert waste landfill, would not be allowed. Inert-waste-only landfills would be encouraged for small-capacity sites where land reclamation is a priority. All sites open to the public should be required to institute a waste screening program to ensure that only acceptable wastes are allowed at the facility.

4. *Plan for and permit one or more new disposal facilities for the C&D waste stream within the County to ensure convenient and cost-effective disposal opportunities through private sector development and operation of a new C&D disposal facility or facilities.*

This alternative would require at least one special-purpose landfill, designed and built to meet WAC 173-304-460 (5) landfill standards, to be sited within the county. As discussed earlier, both wood waste and inert and demolition waste landfills would not be permitted under these current classifications. Sufficient capacity should be available for in-county disposal needs for the next 20 to 40 years, with this option, some of that disposal capacity would be in-county. A facility that would be sited to primarily accept out-of-region generated waste for disposal is not desirable. Private "own use" industrial landfills should be evaluated on a specific-needs basis. Small-capacity sites should be limited to accepting only inert waste.

If a separate landfill were built for the entire C&D waste stream, it would have to conform, with some modifications, to the siting and design regulations for MSW, rather than to the less restrictive regulations for wood waste and inert and demolition waste landfills. This siting and permitting could create a special-purpose landfill. Any landfill sited and operated under the less restrictive inert-waste-only standard should be required to institute stringent waste screening and acceptance procedures to ensure that only inert waste is accepted and disposed.

The East County Reclamation and Recycling proposal for the development of a C&D facility indicates that the private sector is interested in providing C&D waste handling facilities in Clark County. The development and operation of multiple facilities to handle the C&D waste stream in Clark County could be encouraged. Multiple private sector facilities would increase price competition that could potentially reduce handling and disposal fees; geographically distribute facilities within Clark County, thereby increasing user convenience; and provide backup C&D disposal sites. Any in-county C&D landfill proposal should incorporate C&D waste recycling into its operation.

Neighborhood advisory groups for individual full-service C&D facilities should be formed and perhaps included as a condition of permitting or the operating agreement. The neighborhood advisory group would meet with the facility operator and other appropriate agency staff, including SWWHD and Clark County, on a periodic basis to resolve questions concerning on-going or future operations at the facility. The

meetings would serve as a format for allowing good lines of communication between the parties.

5. *Plan for and permit one or more new disposal facilities for the C&D waste stream within the county to ensure convenient and cost-effective disposal opportunities through public sector development of a new C&D facility or facilities.*

Clark County could plan and permit one or more new facilities for the C&D waste stream. Historically, the private sector has been responsible for managing the C&D wastestream in Clark County. This appears to be continuing with existing recycling and export practices and the proposed private development of a C&D facility within the county. These efforts and other future efforts will probably be adequate for the management of the C&D waste stream over the 20-year planning period. With proper siting and operating standards, it may be preferable that the private sector continue to provide this service.

6. *Plan for and permit one or more new disposal facilities for the C&D waste stream within the county to ensure convenient and cost-effective disposal opportunities through joint public and private sector development of new a C&D facility or facilities.*

To encourage private-sector involvement and the development of capacity for the county's waste, there are three approaches the county may choose to take:

Independent Private Sector Involvement

The county and cities could allow the private sector to proceed with the siting and development of one or more in-county special-purpose landfills. These landfills would accept C&D wastes and have sufficient capacity to handle the volume of waste generated within the county, as well as the anticipated volume of imported out-of-county waste over the next 20 years.

This approach reflects the county's present situation. It encourages the private sector to provide for C&D management without county participation, other than through permitting and its general oversight role in solid waste matters. Recently, there has been some on-going private sector activity, concerning the siting and development of C&D facilities within the county. These efforts, if successful, will probably be adequate to provide for the management of the C&D waste stream over the 20-year planning period.

Private Sector Involvement through County-Controlled Procurement

This alternative calls for the county to initiate a procurement process to select and contract with a vendor, or vendors, for C&D management services. The county would develop a competitive process for periodically evaluating proposals for C&D landfills and awarding contracts for the operation of the landfills, pursuant to RCW 36.58. Prior to the final approval of a solid waste conditional permit, private C&D disposal facilities within the county would be required to enter into an operating (franchise) agreement with the county.

Private Sector Involvement with County in Selecting a Reserve Site

This alternative calls for the county to begin a reserve site selection and development process for a C&D landfill or processing facility if the private sector is unwilling or unable to provide for management of the C&D waste stream. Under this alternative, the county would take over the responsibility for providing for C&D management or allow the private sector to continue its siting activity, while selecting a reserve site. Initially the reserve site selection process could encourage the private sector to provide a facility, while providing insurance against failure by the private sector.

7. *Discourage local landfill capacity and rely on recycling and the export of residual wastes to a contracted and authorized landfill.*

This alternative would continue use of a landfill outside of the County for the disposal of the C&D waste stream. C&D could either be landfilled at CRC's MSW landfill, as is currently the case, or at other private MSW or special purpose landfills.

Since 1992, Clark County's non-recycled MSW, including some C&D wastes, has been exported out of the county to the Finley Buttes Landfill in Eastern Oregon, through the CRC transfer station system. When the CRC MSW recycling and exporting system was developed, it was not necessarily intended to become the principal method of handling the C&D waste stream. In practice, sorting construction and demolition wastes on the tipping floor has provided CRC with a relatively easy way to meet its required recycling targets and has not caused operational problems.

In addition to the Finley Buttes Landfill, a portion of the county's C&D waste is being disposed in at least two Portland, Oregon metropolitan area landfills, including the Hillsboro Landfill and East County Recycling Center. Other out-of-county regional landfills that could receive the C&D waste stream include, but are not limited to, the Columbia Ridge Landfill in Gilliam County, Oregon (Waste Management), and the Roosevelt Regional Landfill in Klickitat County (Allied, formerly Rabanco). Oregon DEQ regulations require that an approved recycling program for C&D waste be instituted by a jurisdiction prior to the use of any regional landfill site in Oregon.

8. *Continue to provide both source-separated and post-collection recycling opportunities for C&D wastes at the CRC transfer stations.*

Since 1992, Clark County's non-recycled MSW, including some C&D wastes, has been exported out of the county to the Finley Buttes Landfill in Eastern Oregon, through the CRC transfer station system. When the CRC MSW recycling and exporting system was developed, it was not necessarily intended to become the principal method of handling the C&D waste stream. In practice, sorting construction and demolition wastes on the tipping floor has provided CRC with a relatively easy way to meet its required recycling targets and has not caused operational problems.

9. *Allow CRC to export residual C&D wastes to the Finley Buttes Landfill for disposal or for higher use.*

Alternative 7 encourages the recycling and export of residuals. In addition, the County could continue to support and encourage CRC to expand its recycling and reuse opportunities, as stated in Alternative 2.

10. Develop and implement a monitoring and documentation program for accumulating and maintaining generation and disposal data for C&D wastes.

Generation, disposal and recycling rates enable better planning for future disposal needs and supporting enhanced private sector waste reduction and recycling efforts. In addition to the data that is currently received at the CRC transfer stations, estimations of C&D wastes imported or exported out of Clark County can be developed through information exchange with other local governments in SW Washington and NW Oregon. Also, new facilities, as well as licensed or authorized recyclers could be required to report data, as part of the facility or collection permit.

11. If necessary to achieve goals or divert waste for other reasons, a future alternative may require applicants for building and demolition permits to estimate the amounts of waste materials that would be generated by their activities and to designate the disposal and recycling method for these wastes.

If voluntary programs are not successful in reaching required diversion or if a mandated reduction in C/D waste disposal is necessary to impose, a recycling plan could be required at the time of issuing a building or demolition permit. Inspection and compliance authority should be a component of the program.

12. The Health District should permit C/D waste facilities to accept specific types of wastes.

The Health District does permit all waste facilities, including C/D facilities, on acceptable types of wastes. C&D wastes in the State of Washington are regulated primarily under WAC 173-304 and in Clark County under County Code Chapter 24.12. In addition, Ecology has issued draft Technical Information Memorandum 90-2, which clarifies the rules for inert and demolition wastes. Revisions to the WAC 173-304 regulations, including revised special waste definitions, are under consideration.

Recommendations

The Solid Waste Advisory Commission reviewed the complete list of Alternatives and has recommended the following Alternatives:

1. *Sponsor public and private sector education program designed to encourage C&D waste reduction and recycling.*
2. *Actively encourage and support the private sector in enhancing and expanding C&D waste recycling and reuse opportunities.*
3. *Use the (building and demolition) permitting process to educate applicants about available recycling opportunities and proper disposal options.*
7. *Discourage local landfill capacity and rely on recycling and the export of residual wastes to a contracted and authorized landfill.*
8. *Continue to provide both source-separated and post-collection recycling opportunities for C&D wastes at the CRC transfer stations.*

9. *Allow CRC to export residual C&D wastes to the Finley Buttes Landfill for disposal or for higher use.*
10. *Develop and implement a monitoring and documentation program for accumulating and maintaining generation and disposal data for C&D wastes.*

<u>The Solid Waste Advisory Commission recommended the following least preferred Alternative, to be used only if needed:</u>

11. If necessary to achieve goals or divert waste for other reasons, a future alternative may require applicants for building, demolition and land clearing permits to estimate the amounts of waste materials that would be generated by their activities and to designate the disposal and recycling method for these wastes.